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MOTOROLA, INC. 1303 EAST ALGONQUIN ROAD IL01/3RD SCHAUMBURG, IL 60196			HO, CHUONG T	
			ART UNIT	PAPER NUMBER
			2664	

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,676

Applicant(s)

BONTA, JEFFREY D.

Examiner

CHUONG T. HO

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892).
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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1. Claims 1-21 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naghian et al. (U.S. Patent No. 6,879,574 B2) in view of Gwon et al. (U.S. Patent No. 2003/0016655 A1).

Regarding to claim 1, see figure 3, Naghian et al. discloses the WLAN access network consists of Access Point (AP) 428 and a group of terminals that are under the direct control of the AP, forming a Basic that are under the direct control of the AP, forming a Basic Service Set (BSS) as the fundamental building block of the access network. AP 428 forms a bridge between wireless (ad hoc wireless network) and wire LAN (wide are network coverage) while the master for the network. AP 428 is analogous to a base station in cellular phone networks. When an AP is present, terminals doe communicate on peer-to-peer basis....All communications between terminals or between a terminal and wired network client go through the AP. AP's are not planned to be mobile, and they form part of the wired network infrastructure. Mobile nodes can roam between APs and therefore seamless campus wide coverage is possible (see col. 7, lines 47-60). The new network where to the node joins may be another mesh network or a network are handled with a method that is compatible with

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current standards of the Internet. This makes it possible to make handovers between almost any kinds of networks (see col. 8, lines 50-58); comprising:

- Establishing communication between a source mobile subscriber unit (terminals) and a destination unit (see col. 7, lines 47-60);
- If the establishing of communication between a source mobile subscriber unit (terminal) and a destination unit (terminal) and a destination unit (terminal) is achieved through wide area network (internet) coverage when source mobile subscriber unit is outside of the neighborhood cell, switching over to ad hoc network (ad hoc wireless network) coverage when the source mobile subscriber unit enters the neighborhood cell to maintain the communication between the source mobile unit (terminal) and the destination unit (terminal) (see col. 8, lines 50-58);
- If the establishing of communication between a source mobile subscriber unit (terminal) and a destination unit (terminal) is achieved through the ad hoc wireless network (mobile ad hoc network) coverage when the source mobile subscriber unit is within the neighborhood cell (Mobile Ad-hoc Network), switching over to the wide area network coverage when the source mobile subscriber mobile unit (terminal) exists the neighborhood cell to maintain the communication between the source mobile subscriber unit (terminal) and the destination unit (terminal) (see col. 8, lines 50-58).

However, Naghian is silent to disclosing defining a neighborhood cell by transmitting a localized wireless coverage are-identifying signal.

Gwon et al., see figure 1, discloses the invention provides a way to reduce packet latency, packet loss and packet jitter that result when communications between a mobile node and one or more other fixed or mobile correspondent nodes is dynamically handed-off from one neighboring node to another due to a change in location of the mobile node within the network (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]); comprising:

- defining a neighborhood cell by transmitting a localized wireless coverage area-identifying signal (see page 4, [0043], it is well known to use beacon signal strength for detecting and handling communication hand-offs between BTS's when a mobile node device 135 changes location on a micro mobility scale);
- If the establishing of communication between a source mobile subscriber unit (terminal) and a destination unit (terminal) and a destination unit (terminal) is achieved through wide area network (IP FIXED CORE NETWORK) coverage when source mobile subscriber unit is outside of the neighborhood cell, switching over to ad hoc network (cellular BTS's) coverage when the source mobile subscriber unit enters the neighborhood cell to maintain the communication between the source mobile unit (terminal) and the destination unit (terminal) (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]);
- If the establishing of communication between a source mobile subscriber unit (terminal) and a destination unit (terminal) is achieved through the ad hoc

wireless network (cellular BTS's) coverage when the source mobile subscriber unit is within the neighborhood cell (cellular BTS's), switching over to the wide area network coverage (IP FIXED CORE NETWORK) when the source mobile subscriber mobile unit (terminal) exists the neighborhood cell to maintain the communication between the source mobile subscriber unit (terminal) and the destination unit (terminal) (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]).

Both Naghian, and Gwon discloses the wide area network, ad-hoc wireless network. Gwon recognizes defining a neighborhood cell by transmitting a localized wireless coverage are-identifying signal. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to define a neighborhood cell by transmitting a localized wireless coverage are-identifying signal in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off.

3. In the claim 2, Naghian et al. discloses the limitations of claim 1 above.

However, Naghian et al. is silent to disclosing if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through wide area network coverage when the source mobile subscriber unit is outside of the neighborhood cell, switching over to the ad hoc wireless network coverage when the source mobile subscriber receive a last hop probing signal (see page 5, [0049]) indicating that the source mobile subscriber unit has entered the neighborhood cell to

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maintain the communication between the source mobile subscriber unit and the destination unit .

Gwon discloses if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through wide area network coverage when the source mobile subscriber unit is outside of the neighborhood cell, switching over to the ad hoc wireless network coverage when the source mobile subscriber receive a last hop probing signal (see page 5, [0049]) indicating that the source mobile subscriber unit has entered the neighborhood cell to maintain the communication between the source mobile subscriber unit and the destination unit (see page 6, [0057]).

Both Naghian, and Gwon discloses the wide area network, ad-hoc wireless network. Gwon recognizes if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through wide area network coverage when the source mobile subscriber unit is outside of the neighborhood cell, switching over to the ad hoc wireless network coverage when the source mobile subscriber receive a last hop probing signal (see page 5, [0049]) indicating that the source mobile subscriber unit has entered the neighborhood cell to maintain the communication between the source mobile subscriber unit and the destination unit. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to provide if the establishing of communication between a source mobile subscriber unit and a destination unit is achieved through wide area network coverage when the source mobile subscriber unit is outside of the neighborhood cell, switching over to the ad hoc wireless network

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coverage when the source mobile subscriber receive a last hop probing signal (see page 5, [0049]) indicating that the source mobile subscriber unit has entered the neighborhood cell to maintain the communication between the source mobile subscriber unit and the destination unit in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Naghian – Gwon) in view of Elliot (U.S.Patent No. 6,456,599 B1).

In the claim 3, the combined system (Naghian – Gwon) discloses the limitations of claim 1 above.

However, the combined system (Naghian –Gwon) is silent to disclosing providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit.

Elliot discloses providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate

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data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit (see col. 8, lines 10-35).

Both Naghian, Gwon, and Elliot discloses the Mobile Ad-hoc wireless network. Elliot recognizes providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Naghian – Gwon) with the teaching of Elliot to

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to provide one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off.

5. In the claim 4, the combined system (Naghian – Gwon) discloses the limitations of claim 1 above.

However, the combined system (Naghian –Gwon) is silent to disclosing providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit.

Elliot discloses providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit (see col. 8, lines 10-35).

Both Naghian, Gwon, and Elliot discloses the Mobile Ad-hoc wireless network. Elliot recognizes providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Naghian – Gwon) with the teaching of Elliot to Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to provide one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication

between the source mobile subscriber unit and the destination unit in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off.

6. In the claim 5, the combined system (Naghian – Gwon) discloses the limitations of claim 1 above.

However, the combined system (Naghian –Gwon) is silent to disclosing providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit.

Elliot discloses providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit (see col. 8, lines 10-35).

Both Naghian, Gwon, and Elliot discloses the Mobile Ad-hoc wireless network. Elliot recognizes providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit.

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Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Naghian – Gwon) with the teaching of Elliot to

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to provide one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off..

7. In the claim 6, Naghian et al. discloses the limitations of claim 3 above.

However, Naghian et al. is silent to disclosing all subscriber units within the neighborhood cell, including the source mobile subscriber unit and the one or more last hop nodes, periodically probing a first set of mobile subscriber units in proximity thereto to collect ad hoc wireless network coverage information.

Gwon discloses all subscriber units within the neighborhood cell, including the source mobile subscriber unit and the one or more last hop nodes (agent) , periodically probing a first set of mobile subscriber units in proximity thereto to collect ad hoc wireless network coverage information (see page 5, [0049]).

Both Naghian, and Gwon discloses the wide area network, ad-hoc wireless network. Gwon recognizes all subscriber units within the neighborhood cell, including the source mobile subscriber unit and the one or more last hop nodes (agent) , periodically probing a first set of mobile subscriber units in proximity thereto to collect ad hoc wireless network coverage information. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to provide all subscriber units within the neighborhood cell, including the source mobile subscriber unit and the one or more last hop nodes , periodically probing a first set of mobile subscriber units in proximity thereto to collect ad hoc wireless network coverage information in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off

8. In the claim 7, the combined system (Naghian – Gwon) discloses the limitations of claim 1 above.

However, the combined system (Naghian –Gwon) is silent to disclosing providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit.

Elliot discloses providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit

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during the communication between the source mobile subscriber unit and the destination unit (see col. 8, lines 10-35).

Both Naghian, Gwon, and Elliot discloses the Mobile Ad-hoc wireless network. Elliot recognizes providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Naghian – Gwon) with the teaching of Elliot to Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to provide one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off.

9. In the claim 8, the combined system (Naghian – Gwon) discloses the limitations of claim 1 above.

However, the combined system (Naghian –Gwon) is silent to disclosing providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit.

Elliot discloses providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit (see col. 8, lines 10-35).

Both Naghian, Gwon, and Elliot discloses the Mobile Ad-hoc wireless network. Elliot recognizes providing one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication between the source mobile subscriber unit and the destination unit. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Naghian – Gwon) with the teaching of Elliot to Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to provide one or more last hop nodes within the neighborhood cell each comprised of a mobile subscriber unit within the neighborhood cell to regulate data packet traffic between the source mobile subscriber unit and the destination unit during the communication

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between the source mobile subscriber unit and the destination unit in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 9-13, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gwon (U.S.Patent No. 2003/0016655) in view of McKenna et al. (U.S.Patent No. 2002/0028690 A1).

In the claims 9, 15, Gwon et al., see figure 1, discloses the invention provides a way to reduce packet latency, packet loss and packet jitter that result when communications between a mobile node and one or more other fixed or mobile correspondent nodes id dynamically handed-off from one neighboring node to another due to a change in location of the mobile node within the network (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]); comprising:

- Establishing a data packet route to a destination (Gateway/Router) through wide area network (IP FIXED CORE NETWORK) coverage (see page 4, [0043])

- Switching over to Ad-Hoc wireless network coverage (cellular BTS'S) coverage to maintain the data packet route to the destination unit upon determining that the data packet route is being disrupted (see page 9, [0084]) and upon entry into a defined neighborhood cell (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]);

However, Gwon is silent to disclosing determining whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area network communication route to a destination unit through a wide area network coverage of operation.

McKenna et al. discloses determining whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area network communication route to a destination unit through a wide area network coverage of operation (see page 20, [0250]).

Both Gwon, McKenna discloses Mobile Ad-Hoc wireless network. McKenna recognizes determining whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area network communication route to a destination unit through a wide area network coverage of operation. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to determine whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area network communication route to a destination unit through a wide area network coverage of operation in order to switch from the wire area network to

ad-hoc wireless network. Therefore, the combined system would have been able to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been able to prevent the loss of any packets during hand-off.

11. In the claim 10, Gwon discloses re-establishing the data packet route to the destination unit through the wide are network coverage within the defined neighborhood cell upon leaving a coverage hose within the neighborhood cell (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]).

12. In the claim 11, Gwon discloses the limitations of claim 9 above.

However, Gwon is silent to disclosing communicating with one or more stationary last hop nodes within the neighborhood cell to enable data packets transmitted on the data packet route to be multiplexed with other subscriber unit data packets onto a single channel for transmission to a wide are network.

McKenna et al. discloses communicating with one or more stationary last hop nodes within the neighborhood cell to enable data packets transmitted on the data packet route to be multiplexed with other subscriber unit data packets onto a single channel for transmission to a wide are network (see page 9, [0097]).

Both Gwon, McKenna discloses Mobile Ad-Hoc wireless network. McKenna recognizescommunicating with one or more stationary last hop nodes within the neighborhood cell to enable data packets transmitted on the data packet route to be multiplexed with other subscriber unit data packets onto a single channel for transmission to a wide are network. Thus, it would have been obvious to one of ordinary

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skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to communicate with one or more stationary last hop nodes within the neighborhood cell to enable data packets transmitted on the data packet route to be multiplexed with other subscriber unit data packets onto a single channel for transmission to a wide area network in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been able to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been able to prevent the loss of any packets during hand-off.

13. In the claim 12, Gwon discloses the switching over to ad hoc wireless network coverage to maintain the data packet route to the destination unit comprises switching over to ad hoc wireless network coverage to maintain the data packet route to the destination unit upon entering into one of a neighborhood cell coverage hole and a neighborhood cell interference region (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]).

14. In the claim 13, Gwon discloses periodically probing a plurality of neighborhood mobile subscriber units to collect ad hoc wireless network coverage information while within the neighborhood cell (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]).

15. In the claim 15, Gwon et al., see figure 1, discloses the invention provides a way to reduce packet latency, packet loss and packet jitter that result when communications between a mobile node and one or more other fixed or mobile correspondent nodes id

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dynamically handed-off from one neighboring node to another due to a change in location of the mobile node within the network (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]); comprising:

- Establishing a data packet route to a destination (Gateway/Router) through wide area network (IP FIXED CORE NETWORK) coverage (see page 4, [0043])
- Switching over to Ad-Hoc wireless network coverage (cellular BTS'S) coverage to maintain the data packet route to the destination unit upon determining that the data packet route is being disrupted (see page 9, [0084]) and upon entry into a defined neighborhood cell (see page 3, [0026], page 5, [0049], [0050], page 6, [0053], page 9, [0084]);

However, Gwon is silent to disclosing determining whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area network communication route to a destination unit through a wide area network coverage of operation.

McKenna et al. discloses determining whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area network communication route to a destination unit through a wide area network coverage of operation (see page 20, [0250]).

Both Gwon, McKenna discloses Mobile Ad-Hoc wireless network. McKenna recognizes determining whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area network communication

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route to a destination unit through a wide area network coverage of operation. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Gwon to determine whether a predetermined number of network frame errors have been received subsequent to the establishing of a wide area network communication route to a destination unit through a wide area network coverage of operation in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been able to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been able to prevent the loss of any packets during hand-off.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Gwon – McKenna) in view of Elliot (U.S. Patent No. 6,456,599 B1).

In the claim 14, Gwon discloses the periodically probing of a plurality of neighborhood mobile subscriber units to collect ad hoc wireless network coverage information.

However, the combined system (Gwon – McKenna) is silent to disclosing periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc

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wireless network coverage route and cost information, wherein the establishing of the data packet route to the destination unit through wide area network coverage within the defined neighborhood cell is executed utilizing the ad hoc wireless network coverage route and cost information.

Elliot discloses periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage route and cost information, wherein the establishing of the data packet route to the destination unit through wide area network coverage within the defined neighborhood cell is executed utilizing the ad hoc wireless network coverage route and cost information (see col. 8, lines 10-35).

Both Naghian, Gwon, and Elliot discloses the Mobile Ad-hoc wireless network. Elliot recognizes periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage route and cost information, wherein the establishing of the data packet route to the destination unit through wide area network coverage within the defined neighborhood cell is executed utilizing the ad hoc wireless network coverage route and cost information. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Naghian – Gwon) with the teaching of Elliot to periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage route and cost information, wherein the establishing of the data packet route to the destination unit through wide area network coverage within the defined neighborhood cell is executed utilizing the ad hoc wireless network coverage route and cost information in order to switch from the wide area network to ad-hoc wireless network. Therefore, the

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combined system would have been enable to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network.

Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naghian et al. (U.S. Patent No. 6,879,574 B2) in view of Bahl et al. (U.S. Patent No. 2004/0223469 A1).

In the claim 16, see figure 3, Naghian et al. discloses the WLAN access network consists of Access Point (AP) 428 and a group of terminals that are under the direct control of the AP, forming a Basic that are under the direct control of the AP, forming a Basic Service Set (BSS) as the fundamental building block of the access network. AP 428 forms a bridge between wireless (ad hoc wireless network) and wire LAN (wide area network coverage) while the master for the network. AP 428 is analogous to a base station in cellular phone networks. When an AP is present, terminals do communicate on peer-to-peer basis....All communications between terminals or between a terminal and wired network client go through the AP. AP's are not planned to be mobile, and they form part of the wired network infrastructure. Mobile nodes can roam between APs

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and therefore seamless campus wide coverage is possible (see col. 7, lines 47-60). The new network where to the node joins may be another mesh network or a network are handled with a method that is compatible with current standards of the Internet. This makes it possible to make handovers between almost any kinds of networks (see col. 8, lines 50-58); comprising:

- A last hop for defining a neighborhood cell (see col. 7, lines 47-60);
- The last hop node further for causing the source mobile subscriber unit to communicate with the destination unit through the conventional wireless network coverage when the source mobile subscriber unit is outside of the neighborhood cell, and for causing the source mobile subscriber unit to communicate with the destination unit through the ad hoc wireless network coverage when the source mobile subscriber unit is within the neighborhood cell (see col. 8, lines 50-58);

However, Naghian is silent to disclosing a source mobile subscriber unit including a first source transceiver for communicating through wide area wireless network coverage outside of the neighborhood cell, and a second source transceiver for communicating through ad hoc wireless network coverage within the neighborhood cell; a destination unit including a first destination transceiver for communicating through the conventional wireless network coverage outside of the neighborhood cell and a second destination transceiver for communicating through the ad hoc wireless network coverage within the neighborhood cell.

Bahl et al. a source mobile subscriber unit including a first source transceiver for communicating through wide are wireless network coverage outside of the neighborhood cell, and a second source transceiver for communicating through ad hoc wireless network coverage within the neighborhood cell; a destination unit including a first destination transceiver for communicating through the conventional wireless network coverage outside of the neighborhood cell and a second destination transceiver for communicating through the ad hoc wireless network coverage within the neighborhood cell (see abstract).

Both Naghian, and Bahl discloses the wide area network, ad-hoc wireless network. Bahl et al. recognizes a source mobile subscriber unit including a first source transceiver for communicating through wide are wireless network coverage outside of the neighborhood cell, and a second source transceiver for communicating through ad hoc wireless network coverage within the neighborhood cell; a destination unit including a first destination transceiver for communicating through the conventional wireless network coverage outside of the neighborhood cell and a second destination transceiver for communicating through the ad hoc wireless network coverage within the neighborhood cell. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Naghian with the teaching of Bahl to provide a source mobile subscriber unit including a first source transceiver for communicating through wide are wireless network coverage outside of the neighborhood cell, and a second source transceiver for communicating through ad hoc wireless network coverage within the neighborhood cell; a destination unit including a

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first destination transceiver for communicating through the conventional wireless network coverage outside of the neighborhood cell and a second destination transceiver for communicating through the ad hoc wireless network coverage within the neighborhood cell in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off.

18. In the claim 17, Naghian et al. discloses the last hop node is a subscriber unit located at a fixed position within the neighborhood cell (see col. 8, lines 50-58).

19. In the claim 18, Naghian et al. discloses the last hop node is a mobile subscriber unit within the neighborhood cell that dynamically defines the neighborhood cell (see col. 8, lines 50-58).

20. In the claim 19, Naghian et al. discloses a plurality of subscriber units located within the neighborhood cell for providing the ad hoc wireless network coverage between the source mobile subscriber unit and the destination unit within the neighborhood cell (see col. 8, lines 50-58).

21. In the claim 20, Naghian et al. discloses the last hop node is further for periodically probing the plurality of mobile subscriber units to collect ad hoc wireless network coverage information from each of the plurality of mobile subscriber units for use in establishing the ad hoc wireless network coverage (see col. 8, lines 50-58).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Naghian – Bahl) in view of Elliot (U.S. Patent No. 6,456,599 B1).

In the claim 21, Naghian discloses the periodically probing of a plurality of neighborhood mobile subscriber units to collect ad hoc wireless network coverage information.

However, the combined system (Naghian – Bahl) is silent to disclosing periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage route and cost information, wherein the establishing of the data packet route to the destination unit through wide area network coverage within the defined neighborhood cell is executed utilizing the ad hoc wireless network coverage route and cost information.

Elliot discloses periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage route and cost information, wherein the establishing of the data packet route to the destination unit through wide area network coverage within the defined neighborhood cell is executed utilizing the ad hoc wireless network coverage route and cost information (see col. 8, lines 10-35).

Both Naghian, Bahl, and Elliot discloses the Mobile Ad-hoc wireless network. Elliot recognizes periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage route and cost information, wherein the establishing of the data packet route to the destination unit through wide area network

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coverage within the defined neighborhood cell is executed utilizing the ad hoc wireless network coverage route and cost information. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Naghian – Bahl) with the teaching of Elliot to periodically probing of a plurality of neighboring mobile subscriber units to collect ad hoc wireless network coverage route and cost information, wherein the establishing of the data packet route to the destination unit through wide area network coverage within the defined neighborhood cell is executed utilizing the ad hoc wireless network coverage route and cost information in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off in order to switch from the wire area network to ad-hoc wireless network. Therefore, the combined system would have been enable to prevent the loss of any packets during hand-off.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T. HO whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

12/26/05


Ajit Patel
Primary Examiner